a7 27. (Amended) The method of claim 23 comprising the additional step of varying the power factor of the AC power generated by the generator structure to a predetermined value.

REMARKS

The Examiner has rejected claims 1-2, 5-13, and 16-22 under 35 U.S.C. § 102(b) as being anticipated by Thompson et al., U.S. Patent No. 5,734,255. Claims 3-4 and 14-28 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Thompson et al. '255 patent in view of Junpei Inagaki et al., U.S. Patent No. 3,548,275. Applicant has amended the pending claims to more particularly define the invention for which protection is sought. As hereinafter described, it is believed that all of the pending claims, namely, claims 1-4, 7-15, 18-23 and 27-28, are in proper form for allowance, and such action is earnestly solicited.

Claim 1 defines a control system for controlling operation of an engine driven, electrical generator. The generator generates AC power having a magnitude and a power factor and an AC voltage having a magnitude and a frequency. The generator is connectable to a load such as a utility source which provides AC power having a magnitude and a power factor and an AC voltage having a magnitude and a frequency. The control system includes a generator controller operatively connected to the engine for controlling operation thereof. In addition, the generator controller is operatively connected to the generator for controlling AC power to generated thereby. A synchronizer is operatively connected to the generator control. The synchronizer monitors the magnitude and the frequency of the AC voltage of the utility source and the magnitude and the frequency of the AC voltage generated by the generator. The generator controller varies the magnitude and the frequency of the AC voltage generated by the generator to match the magnitude and the frequency of the AC voltage of the utility source. As hereinafter described, nothing in the cited references show or suggest connecting a control system for interconnecting the output of a generator to a utility source or a synchronizer for synchronizing

the output of the generator and the utility source. As such, it is believed that independent claim 1 defines over the cited reference.

The Thompson et al. '255 patent discloses a system for providing electrical power to a remote community. The system includes a generating station having a plurality of generators. Each generator is controlled by a microprocessor-based controller. The Examiner suggests that the generators may be connected to a utility source and that a synchronizer is operatively connected to the generator controller for synchronizing the magnitude and frequency of the AC voltage of the utility source and the magnitude and frequency of the AC voltage generated by the generator. However, this is simply incorrect.

Referring to Column 7, lines 6-21, it is intended that each generating station be defined as a stand-alone generating station in that it supplies electricity only to the community with which it is associated and is not connected electrically for load sharing purposes with any other of the remotely located generating stations. Multiple generating stations adjacent to the same community could be electrically connected together in a local electrical grid. As such, contrary to the Examiner's suggestion, that the generators disclosed in the Thompson et al. '255 patent are not intended to be connected to a utility source. It is intended that the generator system disclosed in the Thompson et al. '255 patent function as a utility source.

The Examiner suggested Column 14, lines 60-64 of the Thompson et al. '255 patent discloses a synchronizer for synchronizing an AC voltage of the utility source and the AC voltage generated by the generator. Once again, this is incorrect. The synchronization referred to at Column 14 of the Thompson et al. '255 patent is not connected to the synchronizing the AC voltage output of the generator to the AC voltage output of a utility source. The section to which the Examiner refers describes how to measure the efficiency of the generator sets disclosed in the Thompson et al. '255 patent. As is known, the efficiency of a generator set is equal to the power generated by the generator set divided by the power inputted into the generator set. The power

inputted into the generator set is the fuel. All the fuel delivered to the fuel pump of the diesel engine is not used by the engine. Some of the fuel is sent back to the fuel tank via a fuel return line. The description provided at Column 14, lines 60-64 is an attempt to describe that the measurements of the fuel supply (FS) and the fuel return (FR) must be synchronized such that instantaneous difference of the two numbers is actually the fuel being consumed by the engine. Synchronizing the measurement adds to the accuracy of the efficiency calculation.

In view of the foregoing, it can be appreciated that nothing in the cited references shows or suggests a control system for an engine driven electrical generator that incorporates a generator control and a synchronizer for synchronizing the output voltage of the generator with the voltage of a utility source and which allows for the generator control to be communicated with over a network. Unlike the cited reference, the structure defined in independent claim 1 allows for a remote user to activate the electrical generator from a remote location such that the electrical generator supplies electrical power in parallel with a utility source. As such, it is believed that independent claim 1 defines over the cited reference and passage to allowance is respectfully requested.

Claims 2-4 and 7-12 depend directly or indirectly from independent claim 1 and further define a control system not shown or suggested in the art. It is believed that dependent claims 2-4 and 7-12 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Referring to claim 13, a generator structure is provided for generating AC power for a load. The load includes a utility source which provides AC power having a magnitude and a power factor and AC voltage having a magnitude and a frequency. The generator structure includes a generator connectable to the load. The generator generates AC power having a magnitude and a power factor and an AC voltage having a magnitude and a frequency. An engine is operatively connected to the generator for driving the generator. The engine has an

adjustable engine speed. A generator control is operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby. The generator control includes a synchronizer for monitoring the magnitude and frequency of the AC voltage provided by the utility source and the magnitude and frequency of the AC voltage generated by the generator such that the generator controller varies the magnitude and frequency of the AC voltage generated by the generator to match the magnitude and frequency of the AC voltage of the utility source.

As heretofore described with respect to claim 1, nothing in the Thompson et al. '255 suggests synchronizing the AC voltage provided by the utility source with the AC voltage generated by the generator since the system disclosed in the Thompson et al. '255 patent is not intended to be connected in parallel with the utility source. As such, it is believed that independent claim 13 defines over the cited reference, and passage to allowance is respectfully requested.

Claims 14-15 and 18-22 depend either directly or indirectly from independent claim 1 and further define a generator structure not shown or suggested in the cited reference. Applicant believes that claims 14-15 and 18-22 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Claim 23 is directed to the method of providing AC power to a load. The load includes a utility source which provides AC power having a magnitude and a power factor and an AC voltage having a magnitude and a frequency. The method includes the step of setting various operating parameters for the generator structure and transmitting the same to the generator structure over a network. AC power and AC voltage are generated with the generator structure in response to the various operating parameters set. The AC power has a magnitude and a power factor and the AC voltage has a magnitude and a frequency. The magnitude and frequency of the AC voltage provided by the utility source and the magnitude and frequency voltage generated by

the generator structure are monitored. The magnitude and frequency of the AC voltage generated by the generator structure is varied to match the magnitude and frequency of the AC voltage provided by the utility source. Thereafter, the generator structure may be interconnected to the utility source in response to the magnitude and frequency of the AC voltage generated by the generator structure being generally equal to the magnitude and frequency of the AC voltage being provided by the utility source.

As heretofore described, nothing the Thompson et al. '255 patent shows or suggests synchronizing the AC voltage provided by the utility source and the AC voltage generated by the generator structure. As such, it is believed that independent claim 23 defines over the Thompson et al. '255 patent. Further, nothing in the Junpei Inagaki et al. '275 patent discloses the synchronizing of the output of a generator with a utility source. As such, it is believed that independent claim 23 also defines over the Junpei Inagaki et al. '275 patent and is in proper form for allowance.

Claims 27-28 depend from claim 23 and further define a method not shown or suggested in the prior art. It is believed that claims 27-28 are allowable as depending from an allowable base claim and in view of the subject matter of each claim.

Applicant believes that the present application with claims 1-4, 7-15, 18-23 and 27-28 is in proper form for allowance and such action is earnestly solicited.

Applicant believes that no fees are necessary at this time. However, the Director is hereby authorized to charge payment of any additional fees associated with this or any other communication or credit any overpayment to Deposit Account No. 50-1170.

Respectfully submitted,

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APPENDIX SHOWING CHANGES IN S.N. 09/882,745

1. (Amended) A control system for controlling operation of an engine-driven, electrical generator which generates AC power and AC voltage having a magnitude and a frequency for a load, the load being operatively connected to a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and a frequency thereto, and the engine having an adjustable engine speed[; the AC power having a magnitude and a power factor; and the AC voltage having a magnitude and a frequency], comprising:

a generator control operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby; [and]

a synchronizer operatively connected to a generator control, the synchronizer monitoring the magnitude and frequency of the AC voltage of the utility source and the magnitude and frequency of the AC voltage generated by the generator; and

a communications link for operatively connecting the generator control to a network[.];

wherein the generator control varies the magnitude and frequency of the AC voltage generated by the generator to match the magnitude and frequency of the AC voltage of the utility source.

3. (Amended) The control system of claim 1 further comprising a transfer switch having a first input connectable to [a] the utility source for providing AC power, a second input operatively connected to the generator, and an output connectable to [a] an alternate load, the transfer switch is selectively movable between a first position connecting the utility source to the alternate load and a second position connecting the generator to the alternate load.

Cancel claims 5 and 6.

7. (Amended) The control system of claim [6] 1 further comprising a switch operatively connected to the generator control and being movable between a first closed position for interconnecting the generator and the load and a second open position, the generator control moving the switch to the closed position in response to the magnitude and frequency of the AC voltage generated by the generator being generally equal to the magnitude and frequency of the AC voltage provided by the utility source.

13. (Amended) A generator structure for generating AC power for a load, the load including a utility source which provides AC power having a magnitude and power factor and AC voltage having a magnitude and frequency, comprising:

a generator connectable to the load, the generator generating AC power having a magnitude and a power factor and AC voltage having a magnitude and a frequency;

an engine operatively connected to the generator for driving the generator, the engine having an adjustable engine speed;

a generator control operatively connected to the engine for controlling operation thereof and operatively connected to the generator for controlling the AC power generated thereby,

the generator control including a synchronizer for monitoring the magnitude and frequency of the AC voltage provided by the utility source and the magnitude and frequency of the AC voltage generated by the generator such that the generator control varies the magnitude and frequency of the AC voltage generated by the generator to match the magnitude and frequency of the AC voltage of the utility source; and

a communications link for operatively connecting the generator control to a network.

14. (Amended) The generator structure of claim 13 further comprising a transfer switch having a first input connectable to a utility source for providing AC power, a second input operatively connected to the generator, and an output connectable to [the] an alternate load, the transfer switch selectively movable between a first position for connecting the utility source to

the alternate load and a second position for connecting the generator to the alternate load.

Cancel claims 16 and 17.

18. (Amended) The generator structure of claim [17] 13 wherein the generator control includes a volt-ampere-reactive (VAR) control for varying the power factor of the AC power generated by the generator.

19. (Amended) The generator structure of claim [17] 13 further comprising a switch operatively connected to the generator control and being movable between a first closed position wherein the generator is connected to the utility source and a second open position, the generator control moving the switch to the closed position in response to the magnitude and frequency of the AC voltage generated by the generator being generally equal to the magnitude and frequency of the AC voltage provided by the utility source.

23. (Amended) A method of providing AC power to a load, the load including a utility source which provides AC power having a magnitude and a power factor and an AC voltage having a magnitudes and a frequency, comprising the steps of:

setting various operating parameters for a generator structure and transmitting the same to the generator structure over a network; and

generating AC power and AC voltage with a generator structure in response to the various operating parameters set, the AC power having a magnitude and a power factor and the AC voltage having a magnitude and a frequency[.];

monitoring the magnitude and the frequency of the AC voltage provided by the utility source and the magnitude and the frequency of the AC voltage generated by the generator structure;

varying the magnitude and the frequency of the AC voltage generated by the generator structure to match the magnitude and the frequency of the AC voltage provided by the utility

source, and

interconnecting the generator structure to the utility source in response to the magnitude and the frequency of the AC voltage generated by the generator structure being generally equal to the magnitude and the frequency of the AC voltage provided by the utility source.

Cancel claims 24-26.

27. (Amended) The method of claim [26] 23 comprising the additional step of varying the power factor of the AC power generated by the generator structure to a predetermined value.